Trend Study 11A-2-00

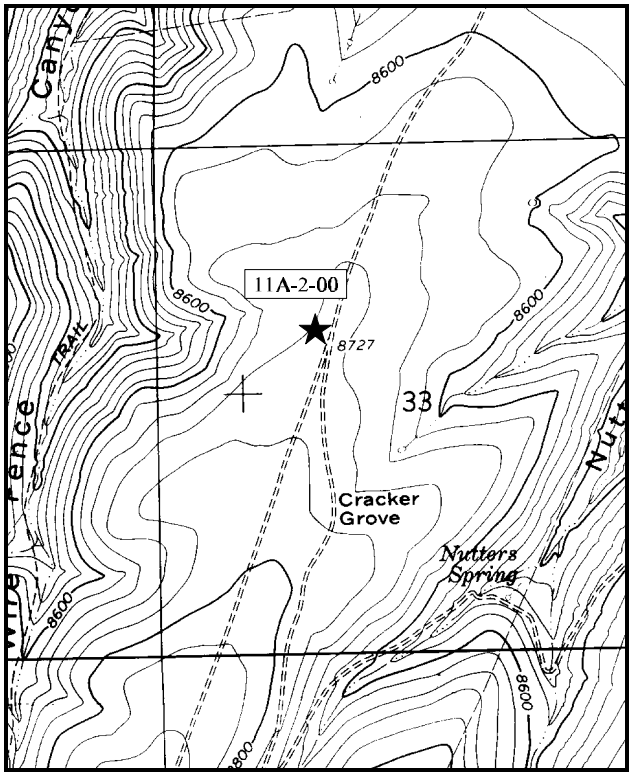
Study site name: Wirefence Canyon . Range type: Big Sagebrush-Grass .

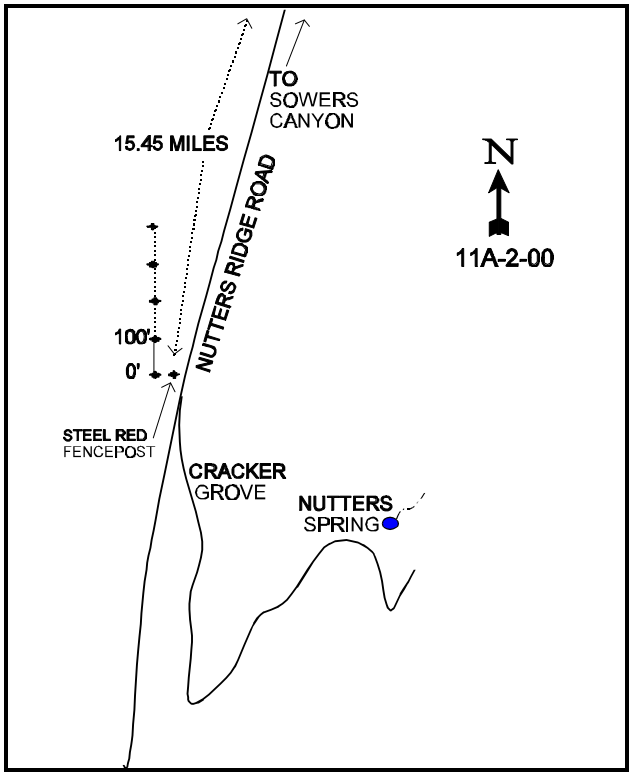
Compass bearing: frequency baseline 348°M .

Footmark (first frame placement) 5 feet, footmarks (frequency belts) line 1 (16 & 86ft), line 2 (33ft), line 3 (52ft), line 4 (66ft). Belt 3 and belt 5 rebar @ 2ft.

LOCATION DESCRIPTION

From the junction of Highway U.S. 40 and the Sowers Canyon Road (near Bridgeland), drive south on the Sowers Canyon Road for 8.5 miles to the Nutters Ridge Road. Turn left here by an old ranch and proceed south along Nutters Ridge for 15.5 miles to a narrow "Y" in the road. Six paces west of the fork is a red steel fencepost. The 0-foot baseline stake is 15 paces west of the red fencepost. The baseline is marked by green, 12-18 inch tall fenceposts.





Map Name: Dyer Mountain Diagrammatic Sketch

Township 6S , Range 5W , Section 33 UTM 4418575.272 N, 546523.990 E

DISCUSSION

Trend Study No. 11A-2 (15-2)

The Wirefence Canyon trend study is located on summer range within the large sagebrush-grass park occupying a flat ridge between the uppermost reaches of Wirefence and Nutters Canyons. Elevation is 8,700 feet with almost flat terrain. This study is located immediately adjacent to an old permanent line-intercept study established in 1977 and is intended to replace it. After decades of season-long grazing by cattle and sheep from 1915 to 1944, a summer rest-rotation grazing system was established in 1972. This study is now grazed by 481 head of cattle from June 1 to October 15 as a 7-unit rest-rotation system. Escape or thermal cover is totally lacking on the study site. The nearest cover is a ½ mile away in Nutters Canyon or within an isolated but badly depleted aspen grove (Cracker Grove), approximately the same distance to the southeast. Use of the site by wildlife is currently light with 1 deer day use/acre (3 ddu/ha) and 18 elk days use/acre (44 edu/ha) being estimated from pellet group transect data taken along the baseline in 2000. Livestock use is currently at a more moderate level with 52 cow days use/acre (128 cdu/ha) being estimated in 2000.

Supplemental site information provided by the Ashley National Forest indicate that numerous treatments have been done on the Anthro Mountain allotment, including plowing and seeding on this particular study site (a 2,363 acre treatment) in 1958 and 1959. These old treatments have future plans for maintenance, which includes burning and/or spraying.

Soil on the site is a moderately shallow loam with an estimated effective rooting depth of just less than 12 inches. Soils are neutral in reactivity (pH of 7.2) and average soil temperature is 53°F at nearly 14 inches in depth. Phosphorus is low at 5.1 ppm, where values less than 10 ppm can limit normal plant growth and development. A hardpan is present about 6 inches below the soil surface as illustrated by the stoniness index estimated from penetrometer readings. Due to the nearly level terrain, erosion is not severe. Vegetative aerial cover was estimated at 36% in 1995, increasing to 48% in 2000. Earlier estimates are considerably lower as only basal vegetative cover was estimated prior to 1995. Cover from rock and pavement combined are estimated at 6% in 1995 and 8% in 2000. Litter cover has fluctuated through time as a function of precipitation. At this time, litter cover is estimated at 40%, an increase from 34% in 1995. Percent bare ground, while fairly steady at 24% in 1982 and 1988, has increased to 32% and 37% in 1995 and 2000 respectively.

Mountain big sagebrush is the dominant overstory species. It has generally been healthy and vigorous in the past with light to moderate use and mostly good vigor. However in 2000, sagebrush displays a dramatic increase in plants showing poor vigor (4% in 1995 to 41% in 2000) with a moderate increase in percent decadency (6% in 1995 to 19% in 2000). Many of the mature and decadent individuals in the population displayed a chlorotic appearance in 2000. Therefore, they were classified as having poor vigor. The drought in 2000 is most likely the cause of this increase in poor vigor on sagebrush. A return to normal precipitation patterns should improve sagebrush vigor in the future. Currently, the sagebrush population is composed of mostly mature individuals (70%) with a moderate level of young plant recruitment (11%) into the population. Biotic potential (# of seedlings) is relatively low at 3% and 1% in 1995 and 2000 respectively. Average leader growth on sagebrush is currently low at only 3 inches. Mountain big sagebrush provides about 70% of the total browse cover in both 1995 and 2000.

Mountain low rabbitbrush density has remained relatively constant over all years with a mostly mature age structure. Mountain low rabbitbrush currently accounts for 28% of the total browse cover with an estimated density of 3,980 plants/acre. Other browse present on the site include: broom snakeweed, gray horsebrush, snowberry and fringed sagebrush.

The understory is the key component on this summer range and it makes up nearly 80% of the total vegetative cover for the site in 2000. Smooth brome is the dominant species, being sampled in every quadrat during all sampling periods and remaining at a fairly stable nested frequency. Smooth brome is more palatable when it is young and loses palatability with age. However, when it has been covered by snow it will soften and increase in palatability. Mutton bluegrass is the second most abundant grass, increasing significantly in nested frequency in 2000. Other species include: sheep fescue, Sandberg bluegrass, Prairie junegrass, crested wheatgrass, intermediate wheatgrass and bluebunch wheatgrass. There was no noticeable use on grasses in 2000. As a group, perennial grasses showed almost not change in sum of nested frequency from 1995 to 2000. No annual grasses have been sampled in any year. Perennial forbs are diverse, but significantly decreased in sum of nested frequency in 2000 due to drought. Many of the species encountered are considered low growing increasers. Looseflower milkvetch is the most abundant forb providing over 6% average cover (or 74% of the total forb cover) and significantly increasing in nested frequency in 2000. Annual forbs are present, but infrequent.

1982 APPARENT TREND ASSESSMENT

Range trend appears to be in a state of decline. The principle cause is almost certainly cattle grazing. Without some serious reduction or a grazing system allowing some rest and regeneration, the prognosis is not good for this site.

1988 TREND ASSESSMENT

Ground cover percentages remained about the same between 1982 and 1988. The estimate for litter cover (51%) is good, especially considering the grazing pressure this site received in 1988 due to its close proximity to water and a salt lick. Percent cover of bare ground remains at 24%. Current observations indicate that the soil condition and trends have stabilized. Trend for browse is stable. Mountain big sagebrush remains at a stable density, displays a low decadency rate and has a high rate of recruitment from young plants (46%). Trend for the herbaceous understory appears stable. Twenty-three perennial grass and forb species were sampled in 1988 making it an important component of this vegetative community.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - stable (3)

1995 TREND ASSESSMENT

The bare interspaces between the mountain big sagebrush show some signs of erosion, but this is only slight. The level terrain helps keep the soil in place along with the vegetation and litter cover. Therefore, soil trend is considered stable. The mountain big sagebrush population is stable with moderate utilization and a low decadency rate. The broom snakeweed and mountain low rabbitbrush populations also appear stable with a mature age structure, although the mature plants are increasing in size. Browse trend is stable at this time. The herbaceous understory accounts for 69% of the total vegetative cover. The dominant species is smooth brome which comprises 27% of the total vegetative cover. The sum of nested frequency for perennial forbs has increased slightly. Many of the forb species are not sought after by wildlife or livestock. Although sum of nested frequency has increased for forbs, a different composition may be desired. Herbaceous understory trend is slightly upward.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - slightly upward (4)

2000 TREND ASSESSMENT

Trend for soil is stable. Erosion appears minimal at the present time and the ratio of protective ground cover to bare ground remained at nearly the same level as in 1995. Trend for browse is slightly down as the number of mountain big sagebrush with poor vigor sharply increased (4% to 41%). There was also a moderate increase in those classified as decadent (6% to 19%) since 1995. Recruitment from young plants also decreased from 42% to 11%. Increases in poor vigor and decadency are likely due to the extremely dry conditions in 2000. These parameters should improve with normal precipitation. Trend for the herbaceous understory is slightly down as sum of nested frequency for perennial forbs decreased by almost 50% due to drought. Forbs should increase on this summer range with normal precipitation.

TREND ASSESSMENT
soil - stable (3)
browse - slightly down (2)
herbaceous understory - slightly down (2)

HERBACEOUS TRENDS --
Herd unit 11A, Study no: 2

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
G	Agropyron cristatum	16	33	22	19	7	14	12	.97	1.05
G	Agropyron intermedium	b41	a3	a8	-	19	2	3	.01	.16
G	Agropyron spicatum	a-	a-	b13	-	-	-	8	-	.55
G	Bromus inermis	330	337	334	23	100	100	100	9.80	16.74
G	Elymus salina	b34	c56	a4	-	13	24	2	.68	.18
G	Festuca ovina	a-	b45	c72	-	-	20	35	.63	1.30
G	Koeleria cristata	b52	b51	a27	2	29	25	11	.73	.73
G	Poa fendleriana	b123	a66	b120	-	53	30	52	1.52	2.95
G	Poa secunda	-	40	39	29	-	18	18	.60	.36
Total for Annual Grasses		0	0	0	0	0	0	0	0	0
Total for Perennial Grasses		596	631	639	71	221	233	241	14.96	24.04
Total for Grasses		596	631	639	71	221	233	241	14.96	24.04
F	Agoseris glauca	-	2	-	-	-	1	-	.00	-
F	Allium spp.	-	3	-	-	-	1	-	.00	-
F	Androsace septentrionalis (a)	-	b32	a7	-	-	13	3	.06	.01
F	Arabis drummondi	a4	b20	a1	-	2	10	1	.07	.00
F	Astragalus argophyllus	a4	ab23	b33	1	3	11	14	.22	.46
F	Astragalus convallarius	4	12	4	1	2	5	2	.05	.03
F	Astragalus detritalis	-	6	-	-	-	2	-	.03	-
F	Astragalus tenellus	a132	a99	b167	-	54	42	72	4.39	6.58
F	Aster spp.	a-	b26	a-	-	-	9	-	.70	-

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
F	Castilleja flava	$_{b}$19	$_{ab}$12	$_{a}$5	-	11	6	3	.14	.04
F	Chaenactis douglasii	$_{b}$6	$_{b}$8	$_{a}$-	-	4	3	-	.16	-
F	Cymopterus longipes	$_{a}$-	$_{c}$122	$_{b}$33	-	-	54	16	.77	.22
F	Descurainia pinnata (a)	-	3	-	-	-	1	-	.00	-
F	Eriogonum alatum	-	-	-	5	-	-	-	.00	-
F	Erigeron eatonii	$_{b}$26	$_{b}$30	$_{a}$7	2	13	17	3	.17	.06
F	Eriogonum umbellatum	$_{a}$15	$_{b}$65	$_{a}$26	-	7	25	14	1.56	.78
F	Hedysarum boreale	$_{a}$-	$_{b}$18	$_{a}$4	-	-	7	1	.25	.00
F	Hymenoxys acaulis	-	1	-	-	-	1	-	.00	-
F	Ipomopsis aggregata	$_{b}$8	$_{a}$-	$_{a}$1	-	3	-	1	-	.03
F	Lesquerella spp.	$_{b}$40	$_{a}$-	$_{a}$-	-	24	-	-	-	-
F	Linum lewisii	2	-	3	2	1	-	1	.00	.01
F	Lupinus argenteus	6	10	6	1	5	4	3	.16	.33
F	Machaeranthera canescens	$_{a}$-	$_{b}$13	$_{a}$1	1	-	6	1	.27	.15
F	Oxytropis sericea	$_{b}$40	$_{a}$2	$_{a}$-	-	19	2	-	.01	-
F	Penstemon caespitosus	$_{b}$48	$_{b}$48	$_{a}$5	-	24	21	4	.66	.09
F	Penstemon comarrhenus	-	1	-	-	-	1	-	.15	-
F	Physaria acutifolia	$_{a}$-	$_{c}$63	$_{b}$7	-	-	29	4	.23	.04
F	Phlox longifolia	11	21	9	-	5	9	4	.09	.04
F	Potentilla spp.	3	-	-	-	1	-	-	-	-
F	Schoencrambe linifolia	5	7	-	-	3	3	-	.02	-
F	Senecio canus	$_{a}$-	$_{b}$7	$_{ab}$2	-	-	3	1	.06	.00
F	Thlaspi arvense (a)	-	1	-	-	-	1	-	.00	-
Total for Annual Forbs		0	36	7	0	0	15	3	0.07	0.01
Total for Perennial Forbs		373	619	314	13	181	272	145	10.24	8.93
Total for Forbs		373	655	321	13	181	287	148	10.32	8.94

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --
Herd unit 11A, Study no: 2

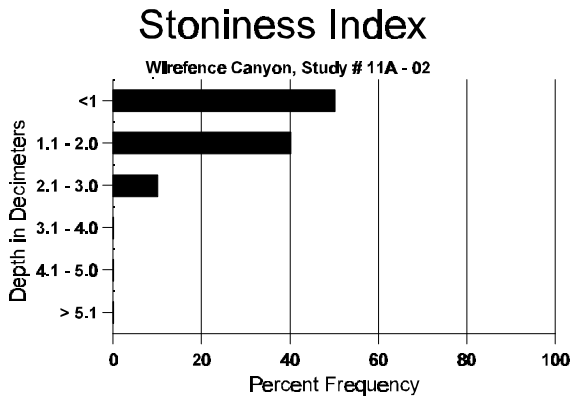
Type	Species	Strip Frequency '95	Strip Frequency '00	Average Cover % '95	Average Cover % '00
B	Artemisia frigida	2	1	.00	-
B	Artemisia tridentata vaseyana	80	70	8.18	6.43
B	Chrysothamnus viscidiflorus lanceolatus	80	68	3.20	2.56
B	Gutierrezia sarothrae	34	23	.04	.27
B	Tetradymia canescens	9	15	.15	.03
Total for Browse		205	177	11.58	9.30

BASIC COVER --
Herd unit 11A, Study no: 2

Cover Type	Nested Frequency '95	Nested Frequency '00	Average Cover % '82	Average Cover % '88	Average Cover % '95	Average Cover % '00
Vegetation	354	357	7.5	6.25	36.06	48.48
Rock	193	100	3.25	3.00	3.17	2.85
Pavement	252	257	18.00	15.50	3.07	5.52
Litter	392	374	46.25	51.25	34.34	40.47
Cryptogams	4	1	.50	0	.15	.15
Bare Ground	344	341	24.50	24.00	32.06	37.24

SOIL ANALYSIS DATA --
Herd Unit 11A, Study # 2, Study Name: Wirefince Canyon

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
11.67	53.6 (13.94)	7.2	43.4	33.0	23.56	4.4	5.1	96.0	0.8



PELLET GROUP FREQUENCY --
Herd unit 11A, Study no: 2

Type	Quadrat Frequency '95	Quadrat Frequency '00	Pellet Transect: Pellet Groups per Acre ⁄00	Pellet Transect: Days Use per Acre (ha) ⁄00
Rabbit	6	10	339	N/A
Elk	15	10	235	18 (45)
Deer	1	6	52	4 (10)
Cattle	1	12	626	52 (129)
Sage Grouse	-	-	44	N/A

BROWSE CHARACTERISTICS --
Herd unit 11A, Study no: 2

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia frigida																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	1	1	-	-	-	-	-	-	-	2	-	-	-	40	4	10	2
	00	-	-	-	-	-	-	1	-	-	1	-	-	-	20	3	4	1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	50%	00%	00%	-50%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			Dec:
	'82	0	-
	'88	0	-
	'95	40	-
	'00	20	-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata vaseyana																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	3	1	-	-	-	-	-	-	-	4	-	-	-	266			4
	95	6	-	-	-	-	-	-	-	-	6	-	-	-	120			6
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
Y	82	10	-	-	-	-	-	-	-	-	10	-	-	-	666			10
	88	19	11	-	-	-	-	-	-	-	30	-	-	-	2000			30
	95	61	25	-	-	-	-	-	-	-	86	-	-	-	1720			86
	00	12	7	-	-	-	-	-	-	-	18	-	1	-	380			19
M	82	36	1	-	-	-	-	-	-	-	35	-	2	-	2466	15	18	37
	88	24	6	-	-	-	-	-	-	-	30	-	-	-	2000	14	20	30
	95	37	55	14	-	-	-	-	-	-	103	-	3	-	2120	14	26	106
	00	54	59	5	-	-	-	-	-	-	66	-	52	-	2360	13	25	118
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	1	4	-	-	-	-	-	-	-	5	-	-	-	333			5
	95	4	3	5	-	-	-	-	-	-	7	-	-	5	240			12
	00	14	17	1	-	-	-	-	-	-	16	-	10	6	640			32
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	160			8
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	180			9

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	02%	00%	04%	+28%
'88	32%	00%	00%	- 6%
'95	41%	09%	04%	-17%
'00	49%	04%	41%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	3132	Dec:	0%
	'88	4333		8%
	'95	4080		6%
	'00	3380		19%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus viscidiflorus lanceolatus																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
Y	82	7	-	-	-	-	-	-	-	-	7	-	-	-	466			7
	88	13	-	-	-	-	-	-	-	-	13	-	-	-	866			13
	95	27	-	-	-	-	-	-	-	-	27	-	-	-	540			27
	00	27	-	-	-	-	-	-	-	-	27	-	-	-	540			27
M	82	50	2	-	-	-	-	-	-	-	52	-	-	-	3466	8	13	52
	88	41	2	-	-	-	-	-	-	-	43	-	-	-	2866	5	4	43
	95	217	-	-	-	-	-	-	-	-	217	-	-	-	4340	8	11	217
	00	166	-	-	-	-	-	-	-	-	166	-	-	-	3320	7	9	166
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	2	-	-	1	-	-	-	-	-	3	-	-	-	60			3
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	03%	00%	00%	- 3%
'88	04%	00%	00%	+22%
'95	00%	00%	00%	-20%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	3932	Dec:	0%
	'88	3798		2%
	'95	4880		0%
	'00	3920		2%

Eriogonum microthecum																		
M	82	9	-	-	-	-	-	-	-	-	9	-	-	-	600	2	4	9
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	600	Dec:	-
	'88	0		-
	'95	0		-
	'00	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Gutierrezia sarothrae																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	7	-	-	-	-	-	-	-	-	7	-	-	-	140			7
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	25	-	-	-	-	-	1	-	-	26	-	-	-	1733	4	4	26
	95	72	-	-	-	-	-	-	-	-	72	-	-	-	1440	7	8	72
	00	36	-	-	-	-	-	-	-	-	36	-	-	-	720	4	5	36
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	2	-	-	-	-	-	-	-	-	-	-	-	2	40			2
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	- 9%
'95	00%	00%	00%	-52%
'00	00%	00%	05%	

Total Plants/Acre (excluding Dead & Seedlings)				
'82	0	Dec:		0%
'88	1733			0%
'95	1580			0%
'00	760			5%

Symphoricarpos oreophilus																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20	12	15	1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9	20	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			
'82	0	Dec:	-
'88	0		-
'95	20		-
'00	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Tetradymia canescens																		
Y	82	1	4	-	-	-	-	-	-	-	1	4	-	-	333			5
	88	5	-	-	-	-	-	-	-	-	5	-	-	-	333			5
	95	2	1	-	-	-	-	-	-	-	3	-	-	-	60			3
	00	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
M	82	-	1	-	-	-	-	-	-	-	-	1	-	-	66	10	11	1
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66	9	12	1
	95	5	2	-	-	-	-	-	-	-	7	-	-	-	140	7	10	7
	00	14	2	2	-	-	-	-	-	-	18	-	-	-	360	6	9	18
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	4	-	-	-	-	-	-	-	-	4	-	-	-	266			4
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	83%	00%	00%	+40%
'88	00%	00%	00%	-70%
'95	30%	00%	00%	+52%
'00	10%	10%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	399	Dec:	0%
	'88	665		40%
	'95	200		0%
	'00	420		0%